

Applicant : Donald T. Cronce
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REMARKS

Claims 1-9 and 12-20 are pending in this application. By this Amendment, claim 18 is amended to correct a minor informality. No new matter is added by this amendment. Reconsideration based on the following remarks is respectfully requested.

I. Amendment Entry After Final Rejection

Entry of this amendment is proper under 37 CFR §1.116 because the amendments: a) place the application in condition for allowance for all the reasons discussed herein; b) do not raise any new issues requiring further search or consideration; c) place the application in better condition for appeal if necessary; and d) address formal requirements of the Final Rejection and preceding Office Action. Accordingly, Applicant respectfully requests entry of this Amendment.

II. Obviousness Rejection under 35 U.S.C. §103

The Final Office Action rejects claims 1-9 and 12-20 as being allegedly obvious and thereby unpatentable under 35 U.S.C. §103(a) over U.S. Patent 6,255,009 to Rusek *et al.* (hereinafter "Rusek") in view of U.S. Patent 4,867,902 to Russell *et al.* (hereinafter "Russell"). This rejection is respectfully traversed.

Rusek and Russell, alone or in combination, do not teach or suggest a power generation system including a decomposition chamber; a solid impellant material containing at least one of a peroxide and a superoxide; a solvent in the decomposition chamber to liquefy and chemically decompose the solid impellant material, thereby releasing thermal energy; a power generator to convert the thermal energy into at least one of mechanical energy and electrical energy; and a power transmission to transfer the converted energy for performing work, as recited in claim 1.

Similarly, Rusek and Russell fail to teach or suggest a process for releasing energy in an energy source that includes providing a decomposition chamber containing a solvent; dissolving a solid impellant material containing at least one of a peroxide and a superoxide; solubilizing the solid impellant material in the solvent to liquefy and chemically decompose the solid impellant material into a liquified peroxide for releasing thermal energy; converting the thermal energy

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into at least one of mechanical energy and electrical energy; and transferring the converted energy for performing work, as recited in claim 12.

For example, the specification discloses various exemplary aspects of a power generation system in which a solid impellant (210) is decomposed in a decomposition chamber (212) with a solvent to release thermal energy. A steam turbine (214) converts the thermal energy into mechanical energy to drive a shaft (218) for work output to, for example, a thruster (220). A thermoelectric generator (216) converts the thermal energy into electrical energy to power a direct current motor (222).

Instead, Rusek discloses a power generation method using hydrogen peroxide decomposition and as noted in Applicant's specification at page 5 lines 6-12 (published paragraph [0017]). In particular, Rusek teaches an electrolytic hydrogen peroxide (H_2O_2) producer 20 to convert seawater 10 to be filtered in a purifier 50 and stored in a holding tank 60 for subsequent disposition via a valve 65 to a catalytic decomposition chamber 70. The hydrogen peroxide can be applied to a thermoelectric generator 80 steam turbine 90 or other applications. See *e.g.*, col. 4, lines 23-32, 57-62; col. 5, lines 28-45 and Fig. 2 of Rusek. There is no teaching or suggestion in Rusek for replacing hydrogen peroxide with a solid material and additionally dissolving this material with a solvent, as provided in Applicant's claims.

Further, Russell discloses encapsulation of alkali superoxide particles with a thin polymer coating to attenuate an oxygen-generating reaction. See *e.g.*, col. 3, lines 20-60 of Russell. This superoxide may be form solid particles or liquid droplets (lines 14-15). In addition, Russell swelling and exfoliation of the microcapsule wall (lines 47-57), rather than dissolving a solid impellant into a solvent to produce liquefied peroxide, as provided in claim 12.

Although Russell identifies the reaction of potassium superoxide in water as sufficiently exothermic to conventionally require heat exchangers for thermal dissipation, this represents waste heat as an undesired byproduct of the reaction for the purpose of oxygen generation. See *e.g.*, col. 1, lines 44-64 of Russell. Thus, by observing thermal energy that is undesirable for the intended purpose, Russell teaches away from Applicant's claimed features for converting thermal energy to produce electrical power.

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Further, there is no motivation to combine features related to the power generator of Rusek with the oxygen producer of Russell. Moreover, the Final Office Action has not established proper motivation for a *prima facie* case of obviousness. The applied references address separate endeavors and approach their respective chemically-based solutions without providing any reasonable justification for one of ordinary skill in the art to combine their respective teachings, even to address the same problem as the Applicant, much less to achieve the congregation of elements in the claims.

Even assuming that motivation to combine the applied references were to be established, the combination fails to teach or suggest Applicant's claimed features. Neither Rusek nor Russell teaches a solid impellant for producing power, and nothing in their teachings suggests that their combination would be advantageous or yield such a material having such claimed properties. Further, the applied references do not address dissolving the impellant in a solvent to produce liquid peroxide, as Rusek begins and ends with such (at room temperature operation) and thus has no need for a solvent, and the moisture exposure of Russell affects the coating, rather than the oxygen-producing core.

A *prima facie* case of obviousness for a §103 rejection requires satisfaction of three basic criteria: there must be some suggestion or motivation either in the references or knowledge generally available to modify the references or combine reference teachings, a reasonable expectation of success, and the references must teach or suggest all the claim limitations. See MPEP §706.02(j). Applicants submit that the Final Office Action fails to satisfy any of these requirements with Rusek and Russell regarding claims 1-9 and 12-20.

III. Applicant's Request

For at least these reasons, Applicant respectfully asserts that the independent claims are patentable over the applied references. The dependent claims are likewise patentable over the applied references for at least the reasons discussed, as well as for the additional features they recite. Consequently, all the claims are in condition for allowance. Thus, Applicant respectfully requests that the rejection under 35 U.S.C. §103 be withdrawn.

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IV. Conclusion

In view of the foregoing amendments and remarks, Applicant respectfully submits that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further is desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicant's undersigned representative at the telephone number listed below.

Respectfully submitted,



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Registration No. 43,186

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